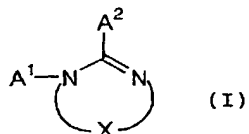


CLAIMS

1. Cyclic amidine compounds represented by the following formula (I):



wherein:

A¹ and A² are hydrogen atom, optionally substituted alkyl group; optionally substituted aryl group; or optionally substituted heterocyclic group; and

X is -C(R¹,R²)-C(R³,R⁴)-, -C(R⁵)=C(R⁶)-, -C(R⁷,R⁸)-C(R⁹,R¹⁰)-C(R¹¹,R¹²)-, or -C(R¹³,R¹⁴)-C(R¹⁵,R¹⁶)-NH- (wherein, R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵ and R¹⁶ are hydrogen atom; halogen atom; optionally substituted alkyl group; optionally substituted aryl group; or optionally substituted heterocyclic group;

or pharmaceutically acceptable salts thereof.

2. The following compounds represented by the formula (I) of claim 1;

2-(6-chloro-3-pyridyl)-2-imidazoline;

2-(6-chloro-3-pyridyl)-1,4,5,6-tetrahydropyrimidine;

2-(6-chloro-3-pyridyl)-1-methyl-2-imidazoline;

2-(6-chloro-3-pyridyl)-1-methyl-1,4,5,6-tetrahydropyrimidine;

1-(6-chloro-3-pyridyl)methylimidazole;

2-(6-chloro-3-pyridyl)imidazole;

2-(6-chloro-3-pyridyl)methyl-2-imidazoline;

2-(6-chloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;

2-(6-chloro-3-pyridyl)methyl-1-methyl-2-imidazoline;

2-(6-chloro-3-pyridyl)methyl-1-methyl-1,4,5,6-

tetrahydropyrimidine;

- 1-(6-chloro-3-pyridyl)methyl-2-methyl-2-imidazoline;
 1-(6-chloro-3-pyridyl)methyl-4,4-dimethyl-2-imidazoline;
 2-(tetrahydrofuran-3-yl)-1,4,5,6-tetrahydropyrimidine;
 5 2-(tetrahydrofuran-3-yl)-2-imidazoline;
 2-(tetrahydrofuran-3-yl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(5-bromo-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(5-bromo-3-pyridyl)methyl-2-imidazoline;
 2-(3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 10 2-(3-pyridyl)methyl-2-imidazoline;
 2-(3-aminophenyl)-1,4,5,6-tetrahydropyrimidine;
 2-(3-quinolyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(2-chloro-5-thiazolyl)-1,4,5,6-tetrahydropyrimidine;
 2-(3-quinolyl)methyl-2-imidazoline;
 15 2-(2-chloro-5-thiazolyl)-2-imidazoline;
 2-(3-quinolyl)-1,4,5,6-tetrahydropyrimidine;
 2-(3-furanyl)methyl-2-imidazoline;
 1-(6-chloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(3,5-dimethyl-4-isoxazolyl)methyl-1,4,5,6-tetrahydro-
 20 pyrimidine;
 2-(3,5-dimethyl-4-isoxazolyl)methyl-2-imidazoline;
 2-(3-thienyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(3-thienyl)methyl-2-imidazoline;
 2-methyl-5-(3-pyridyl)-2-imidazoline;
 25 5-(3-pyridyl)-2-imidazoline;
 1,2-bis[(6-chloro-3-pyridyl)methyl]-1,4,5,6-tetrahydro-
 pyrimidine;
 1-(6-chloro-3-pyridyl)methyl-2-(3-pyridyl)-2-imidazoline;
 2-(5,6-dichloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 30 2-(6-chloro-3-pyridyl)methyl-5-phenyl-1,4,5,6-tetrahydro-
 pyrimidine;
 2-(4-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;

- 2-(2-chloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(2,6-dichloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-[2-(6-chloro-3-pyridyl)ethyl]-1,4,5,6-tetrahydropyrimidine;
 2-[2-(6-chloro-3-pyridyl)ethyl]-2-imidazoline;
- 5 2-(6-methyl-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 1,2-bis[(6-chloro-3-pyridyl)methyl]-2-imidazoline;
 2-(6-methyl-3-pyridyl)methyl-2-imidazoline;
 2-(6-ethoxy-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(6-ethoxy-3-pyridyl)methyl-2-imidazoline;
- 10 2-(6-fluoro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(5,6-dichloro-3-pyridyl)methyl-2-imidazoline;
 2-(6-chloro-3-pyridyl)methyl-5,5-dimethyl-1,4,5,6-tetrahydro-
 pyrimidine;
 2-(2-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
- 15 1-(5,6-dichloro-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(5,6-dichloro-3-pyridyl)methyl-1-methyl-2-imidazoline;
 2-(6-chloro-3-pyridyl)methyl-4-methyl-1,4,5,6-tetrahydro-
 pyrimidine;
 1-[2-(6-chloro-3-pyridyl)ethyl]-1,4,5,6-tetrahydropyrimidine;
- 20 1-(3-pyridazinyl)methyl-1,4,5,6-tetrahydropyrimidine;
 1-(6-methyl-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 1-(3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine;
 3-(6-chloro-3-pyridyl)methyl-1,4,5,6-tetrahydro-1,2,4-triazine;
 2-[1-(6-chloro-3-pyridyl)ethyl]-1,4,5,6-tetrahydropyrimidine;
- 25 1-(2-chloro-5-thiazolyl)methyl-1,4,5,6-tetrahydropyrimidine;
 1-[2-(6-chloro-3-pyridyl)ethyl]-2-methyl-2-imidazoline;
 1-[2-(6-chloro-3-pyridyl)ethyl]-4,4-dimethyl-2-imidazoline;
 2-(2-chloro-5-thiazolyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(2-chloro-5-thiazolyl)methyl-2-imidazoline;
- 30 2-(5-pyrimidyl)methyl-1,4,5,6-tetrahydropyrimidine;
 2-(5-pyrimidyl)methyl-2-imidazoline;
 2-(5-methyl-3-pyridyl)methyl-1,4,5,6-tetrahydropyrimidine.

and pharmaceutically acceptable salt thereof.

3. Activators for $\alpha 4\beta 2$ nicotinic acetylcholine receptors containing the compound or pharmaceutically acceptable salt thereof claimed in claim 1 or 2, as active ingredient.

4. The activators for $\alpha 4\beta 2$ nicotinic acetylcholine receptors according to claim 3, wherein said activators are agonists or modulators at $\alpha 4\beta 2$ nicotinic acetylcholine receptors.

5. A medicament for preventing or treating cerebral circulation diseases comprising the activator for $\alpha 4\beta 2$ nicotinic acetylcholine receptors claimed in claim 3 or 4.

6. A medicament for preventing or treating neurodegenerative disease, dementia, motor ataxia, and neuropathy and mental disease comprising the activator for $\alpha 4\beta 2$ nicotinic acetylcholine receptors claimed in claim 3 or 4.

7. The medicament according to claim 6, wherein said neurodegenerative disease is Alzheimer's disease or Parkinson's disease, said dementia is cerebrovascular dementia, said motor ataxia is Tourette's syndrome, and said neuropathy and mental disease is neurosis during the chronic cerebral infarction stage, anxiety or schizophrenia.

8. A medicament for improving the cerebral metabolism, neurotransmission functional disorder and memory disorder, for protecting brain, or having analgesic effect, which comprises the activator for $\alpha 4\beta 2$ nicotinic acetylcholine receptors claimed in claim 3 or 4.

9. A medicament for preventing or treating inflammatory intestinal diseases comprising the activator for $\alpha 4\beta 2$ nicotinic acetylcholine receptors claimed in claim 3 or 4.

5 10. The use of the compounds claimed in claim 1 or 2 as the activators for $\alpha 4\beta 2$ nicotinic acetylcholine receptors.

11. The method of preventing or treating cerebral circulation diseases which comprises administering activators for $\alpha 4\beta 2$
10 nicotinic acetylcholine receptors claimed in claim 3 or 4.

12. The method of preventing or treating neurodegenerative diseases, dementia, motor ataxia, and neuropathy and mental disease which comprises administering activators for $\alpha 4\beta 2$
15 nicotinic acetylcholine receptors claimed in claim 3 or 4.

13. The method according to claim 12, wherein said neurodegenerative disease is Alzheimer's disease or Parkinson's disease, said dementia is cerebrovascular dementia, said motor
20 ataxia is Tourette's syndrome, and said neuropathy and mental disease is neurosis during the chronic cerebral infarction stage, anxiety or schizophrenia.